arising from the anterior part of the spinal cord, and passing through the first intervertebral foramen, the author (following Burdach) names the hypoglossal. Section of the glossopharyngeal nerves does not cause any perceptible loss of motion or of common sensation, and this fact, together with its distribution to the fungiform papillæ, leads the author to consider this nerve as the nerve of tasting. On the other hand, when the hypoglossal nerves are divided, the tongue is no longer sensible to mechanical irritation, and its motions are entirely abolished. Simultaneous division of the right and left glossopharyngeal nerves is followed by the death of the animal in a few days, and the same effect ensues after division of both hypoglossals. This result, which takes place more speedily in summer than in winter, the author is disposed to ascribe to a disturbance of the mechanical process of respiration, in which, as is well known, the muscles of the frog's mouth and tongue take a large share.

To ascertain the changes which take place in the nerve-fibres after division of the trunks to which they belong, the operation was confined to the nerve of one side only, and the fibres of the uninjured nerve of the other side served for comparison. These changes ensue more speedily, and go on more rapidly in summer than in winter, commencing usually in about five days. The pulp contained in the tubular nerve-fibres, originally transparent, becomes turbid, as if it underwent a sort of coagulation, and is soon converted into very fine granules, partly aggregated into small clumps, and partly scattered within the tubular membrane. These granules are at first abundant, and render the nerve-fibre remarkably opaque; but in process of time they diminish in number, and, together with the inclosing membrane, at length disappear, so that at last the finest ramifications of the nerves which go to the papillæ, or those going to the muscular fibres of the tongue (according to the nerve operated on), are altogether lost to view, in consequence of the destruction and evanescence of their elementary fibres. The disorganization begins at the extremities of the fibres, and gradually extends upwards in the branches and trunk of the nerve. The other tissues of the tongue remain unaltered. When the cut ends of the nerve are allowed to reunite, the process of disorganization is arrested, and the nervous fibres are restored to their natural condition. The author ascribes the disorganization and final absorption of the nerve-fibres to an arrestment of their nutrition caused by interruption of the nervous current, and considers his experiments as affording most unequivocal evidence of the dependence of the nutrition on the nervous power.

February 28, 1850.

PETER MARK ROGET, M.D., Vice-President, in the Chair.

The following papers were read:—

1. "Sequel to a Paper on the reduction of the Thermometrical

Observations made at the Apartments of the Royal Society, with an Appendix." By James Glaisher, Esq., F.R.S.

The principal object of this paper is the connexion of the results deduced in a former paper from the observations at the Royal Society's Apartments, with the observations at the Royal Observatory at Greenwich, in order to determine mean numerical values, and to establish the laws of periodic variation from this long series of observations; the two series of observations are here reduced to one and the same series.

The observations at the Royal Society having been discontinued between the years 1781 and 1786, it was necessary to supply this link in the series, more particularly as these years were distinguished by very severe weather, and their omission would have a sensible effect on the results. The deficient observations have been supplied by a comparison of the observations which were made at Somerset House, with the observations during the corresponding years made by Mr. Barker at Lyndon in Rutlandshire, from 1771 to 1799, corrections being thus obtained for reducing the Lyndon observations to those at Somerset House.

By a comparison of the temperature of the air at Somerset House and at the Royal Observatory for every month during the years 1833 to 1843, corrections necessary to be applied for reducing the mean values at the one place to those at the other, are deduced.

Thus the results of the observations at Somerset House are reduced to those at the Royal Observatory, and a table is given showing the mean temperature at the latter place of each month in every year from 1771 to 1849 inclusive. By taking the means of the several columns in this table, the mean temperature of each month is deduced from all the observations. From these mean monthly temperatures a table is constructed showing the excess of the mean monthly temperature at Greenwich for each year, above the temperature of the month deduced from all the years.

Tables are next given showing the mean temperature in quarterly periods for the year, and for successive groups of years at the Royal Observatory at Greenwich, from the year 1771 to 1849; and the excess of the quarterly and yearly mean temperatures in every year, and for groups of years, above the means from all the years. The author remarks that the numbers in these tables do not at all confirm the idea that a hot summer is either preceded or followed by a cold winter, or *vice versâ*; but on the contrary it would appear that any hot or cold period has been mostly accompanied by weather of the same character, and instances are cited in support of this conclusion.

Tables are also given, based upon the readings of the self-registering thermometers, exhibiting the extreme readings at Somerset House and at the Royal Observatory.

Incidentally the author goes into an inquiry respecting the relative temperature of London and the country in its neighbourhood. From the observations made by Mr. Squire at Epping from 1821 to 1848, and also from those at Lyndon, he concludes that the general fact of a higher winter temperature and lower summer temperature at

the Royal Society's Apartments is satisfactorily proved, and that the same cause has been in operation at both seasons; this cause he considers to be the vicinity of the river Thames to the place of observation. With the view of showing the extent to which this cause operates, a table is given of the mean monthly temperature of the water of the Thames, and a comparison is made between the results of observations made on board the 'Dreadnought' Hospital Ship, at the height of 32 feet above the water, with simultaneous observations at the Royal Observatory. From this comparison it is concluded, that at all seasons of the year the temperature at the 'Dreadnought' is above that at the Observatory during the night hours, and that it is below during the mid-day hours only: at times of extreme temperature the effects of the water upon the temperature of the air is very great.

The paper is accompanied by diagrams exhibiting to the eye, by means of coordinates, the numerical results given in the tables.

2. "On the Communications between the Tympanum and Palate in the Crocodilian Reptiles." By Richard Owen, Esq., F.R.S. &c.

After citing the descriptions by Cuvier, Kaup, Bronn, and De Blainville of the Eustachian tubes and the foramina in the base of the cranium of the recent and extinct Crocodiles, the author gives an account of the nerves, arteries, veins and air-tubes that traverse these different foramina, and thus determines the true position of the carotid foramina and posterior nostrils in the *Teleosauri* and other fossil *Crocodilia*, which had been a matter of controversy amongst the authors cited. In the course of these researches the author discovered a distinct system of Eustachian canals superadded to the ordinary lateral Eustachian tubes, which he describes as follows:—

"From each tympanic cavity two passages are continued downwards, one expands and unites with its fellow from the opposite side to form a median canal which passes from the basisphenoid to the suture between that and the basioccipital, where it terminates in the median canal continued to the orifice described by M. De Blainville as the posterior nostril. The second passage leads from the floor of the tympanic cavity to a short canal which bends towards its fellow, expands into a sinus and divides: one branch descends and terminates in the small lateral foramen at the lower end of the suture between the basioccipital and the basisphenoid: the other branch continues the course inwards and downwards until it meets its fellow at the median line of the basioccipital, and it forms the posterior primary division of the common median canal: this soon joins the anterior division, and the common canal terminates at the median opening below. Membranous tubes are continued from the three osseous ones, and converge to terminate finally in the single Eustachian orifice on the soft palate behind the posterior nostril. The mucous membrane of the palate lines the various osseous canals above described, and is continued by them into the lining membrane of the tympanum."

With regard to the homologies of the above described air-passages,